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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/723,044

11/25/2003

Richard K. Errickson

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EXAMINER

NGUYEN, THAN VINH

ART UNIT

PAPER NUMBER

2187

DATE MAILED: 07/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/723,044

Applicant(s)

ERRICKSON ET AL.

Examiner

Than Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-14 and 16-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-14 and 16-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/17/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This is a response to the amendment, filed 5/24/06.
2. Claims 1-7,9-14,16-19 are pending.
3. Claims 8 and 15 have been canceled.
4. The IDS, filed 4/17/06, has been considered.

Response to Amendment/Arguments

5. In response to the amendment to claims 1,6,13,18,19 the previous rejection to claims 1-7,9-14,16-19 are withdrawn.
6. In response to the amendment to claims 3-5 and 14, the previous objection to these claims is withdrawn.
7. Applicant has amended the claims to include new limitations not previously considered. The amended claims are addressed below. The claimed limitation of resource address designation is interpreted as a memory address/designation/location. This is taught in Bailey (see discussion below).

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-7,11-14,18,19 are rejected under 35 U.S.C. 102(e) as being anticipated by Bailey et al (US 6,598,144 B1).

As to claims 1,6,13,18,19:

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9. Bailey teaches the claimed system and method of performing memory mapped input output operations to an alternate address space comprising: establishing a first instruction directed to a first memory mapped input output alternate address space (HCA memory-mapped I/O address space; 4/15-65) associated with an adapter (host channel adapter 12) to store data in accordance with a definition of resource address designation (send store operation to HCA 12 with address designation/location; 4/25-40), said resource address designation configured for decomposition thereof such that the first memory mapped alternate address space associated with said adapter is accessible (access/request address/location is mapped/translated to access the physical location; 4/50-65); establishing a second instruction directed to said first memory mapped input output alternate address space associated with an adapter to load data in accordance with said definition(s) of said z/Architecture (read/load data instruction from HCA 12 with address designation/location; 4/30-35); and wherein a process issues at least one of said first instruction and said second instruction and thereby causes execution of at least one of said store and load with said first alternate address space (access/read/write to adapter 12 MMIO address space using address designation/location; 4/15-41). The claimed resource address designation is interpreted as an address/location that is requested. Bailey uses address translation to map the request address/location to the adapter's memory address space (4/54-65, 5/18-25).

As to claim 2:

10. Bailey teaches said first alternate address space is not a partition of a main address space from which said issuing process is executing (adapter address space is separate from system address space; 4/60-62).

As to claim 3:

11. Bailey teaches said process issuing said at least one of said first instruction and said second instruction and thereby causes execution of at least one of said store and load with said first alternate address space operates in a problem state of a machine (issue read/write to MMIO address space in user mode; 2/11; 4/30-40).

As to claim 4:

12. Bailey teaches said execution includes said at least one of said store and load with an allocated resources associated first alternate address space (4/15-41).

As to claim 5,14:

13. Bailey teaches said problem state corresponds to a least privileged execution state in said z/Architecture (user/kernel mode; 2/10-11).

As to claim 7:

14. Bailey teaches at least one of said first instruction and said second instruction is executed without supervisory state intervention (user mode; 2/11).

As to claim 11:

Bailey teaches said adapter includes address spaces as partitions of said alternate address space (MMIO/system address spaces; 4/60-65).

As to claim 12:

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15. Bailey teaches said multiple address spaces are governed by at least one of a resource type and storage area types associated with said adapter (system and MMIO address spaces are for different resources; 4/55-65).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 9-10,16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey et al (US 6,598,144 B1).

As to claim 9,10,16,17:

18. Bailey does not specifically teach including a second alternate address space associated with a second adapter, the second alternate address space being different than the first alternate address space. Bailey only describes one host channel adapter with its MMIO address space. Bailey does teach operating in a system environment in which multiple host channel adapters are used (1/49-61). It would have been obvious to one of ordinary skills in the art at the time of the invention to use multiple host channel adapters, each with its own address space, in the invention of Bailey, to provide for more sharing of data across cluster resources, as suggested by Bailey.

Conclusion

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19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Than Nguyen whose telephone number is 571-272-4198. The examiner can normally be reached on 8am-3pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks, can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Than Nguyen
Primary Examiner
Art Unit 2187